

## Curriculum Vitae

**Stephen Pan**  
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### Education

Year	Degree	Field	Institution
1998	HS diploma		Sewickley Academy, Sewickley, PA
2002	BA	Biology	Columbia University, New York, NY
2007	MD	Medicine	University of Pittsburgh, Pittsburgh, PA
2012	MS	Biomedical Informatics	Stanford University, Stanford, CA

### Postdoctoral Training

2007-2010	Resident, Internal Medicine Stanford Health, Stanford, CA.	Director: Abraham Verghese, MD
2010-2012	Fellow, Biomedical Informatics Stanford University School of Medicine, Stanford, CA.	Director: Russ Altman, MD PhD
2011-2014	Fellow, Cardiovascular Medicine Stanford Health, Stanford, CA.	Director: John Giacomini, MD FACC
2014-2015	Fellow, Advanced Heart Failure & Transplant Columbia University Medical Center, New York, NY.	Director: Rachel Bijou, MD

### Licensure and Certification

2008	Medical License (CA): A105473
2014	Medical License (NY): 273589.
2010	Internal Medicine, American Board of Internal Medicine.
2014	Cardiovascular Medicine, American Board of Internal Medicine.
2015	Echocardiography, National Board of Echocardiography.
2016	Advanced Heart Failure & Transplant Cardiology, American Board of Internal Medicine.

### Academic Appointments

2015-	Instructor, Department of Medicine, NYU Langone Medical Center, New York.
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### Hospital Appointments:

2010-2014	Intermittent Staff Physician, Department of Medicine, Palo Alto VA, Palo Alto, CA.
2010-2014	Nocturnist Physician, Department of Medicine, Stanford Health, Stanford, CA.

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**3702-3**

### **Other Professional Positions**

2005-2006 *HHMI-NIH Research Scholar*, lab of Elizabeth G. Nabel, MD, Vascular Biology Section, National Human Genome Research Institute, National Institutes of Health, Bethesda, MD.

2003-2003 *Research Associate*, lab of Nina F. Schor, MD PhD, Department of Neurology, Children's Hospital of Pittsburgh, Pittsburgh, PA.

2000-2002 *Research Assistant*, lab of Hal A. Skopicki, MD PhD, Division of Cardiology, Columbia University Medical Center, New York, NY.

### **Awards & Honors**

1998 Semi-finalist, National Merit Honor Scholarship Program

1998-2001 Columbia University Dean's List

2003 Certificate of Merit for Excellence in Biomedical Science Research, University of Pittsburgh School of Medicine

2005 Howard Hughes Medical Institute-National Institutes of Health Research Scholar

2006 Alpha Omega Alpha Honor Medical Society

2014 Gerald Reaven Award for Excellence in Basic Science Research, Division of Cardiovascular Medicine, Stanford Hospital & Clinics

### **Major Committee Assignments**

NYU Langone Medical Center

2016- Advisory committee to Kidney-CARES program.

2016- Heart Failure Liaison, Adult Congenital Heart Disease Program.

2015- Program Evaluation Committee, Advanced Heart Failure and Transplant Fellowship.

### **Affiliations**

2011- American Heart Association.

2011- American College of Cardiology.

2015- International Society for Heart & Lung Transplant.

2017- Heart Failure Society of America.

### **Principal Clinical and Hospital Service Responsibilities**

2015- Attending Physician, Heart Failure & Transplant Cardiology, NYU Langone Medical Center, New York, NY.

2015- Attending Physician, Heart Failure & Transplant Cardiology, Bellevue Medical Center, New York, NY.

### **Major Research Interests**

1. Genetics and genomics of dilated and other forms of cardiomyopathy.
2. Myocardial recovery after mechanical circulatory support.
3. Incidence, diagnosis, and treatment of cardiac sarcoidosis.

**Grants Received**

Current

Agency	Project Title	Award Type	Grant Number	Period	Total Direct Costs	Role	% Effort
NIH	Precision Medicine for Dilated Cardiomyopathy in European and African Ancestry	Subcontract/ Subaward	18-A0-00-1000412	5/17-4-18	105,847	Site PI	2%

**Invited Seminars and Lectures**

VA ECMO & Cardiogenic Shock. ELSO Adult ECMO Management Workshop, Society of Critical Care Medicine 48<sup>th</sup> Critical Care Congress. San Antonio, Texas. February 23<sup>rd</sup>, 2018.

Non-ischemic Cardiomyopathy: Does Etiology Matter? NYU Queens Cardiology Grand Rounds. Bayside, New York. December 13<sup>th</sup>, 2017.

ECMO & Cardiogenic Shock. Medicine Grand Rounds, NYU Lutheran Medical Center. Brooklyn, New York. November 30<sup>th</sup>, 2016.

Myocardial Recovery From Short- and Long-Term Cardiac Support Devices: Results From the UNOS Registry. 35<sup>th</sup> Annual Meeting of the International Society of Heart & Lung Transplantation. Nice, France. Apr 16, 2015.

The Exome Sequencing Project & Genetic Data to Support a New Model for Hypertrophic Cardiomyopathy. American Heart Association Scientific Sessions. Dallas, TX. Nov 18, 2013.

How Can You Recognize Pathological Sequence Variants? Genetic Discovery in the Post-GWAS Era. American Heart Association Scientific Sessions. Los Angeles, CA. Nov 5, 2012.

How to Do Genome/Exome Studies in Your Population. Stanford Cardiovascular Institute Member Retreat. Stanford, CA. Sept 2011 and Sept 2012.

Genomics and Personalized Medicine: Focus on Cardiovascular Disease. Stanford Department of Pharmacy Continuing Education Lecture Series. Stanford, CA. September 14<sup>th</sup>, 2011.

**Bibliography:****Original Reports**

Son AY, Reyentovich A, **Pan S**, DeAnda A Jr, Balsam LB. Resolution of Intractable Ventricular Tachycardia After Surgical Repositioning of a HeartMate II Inflow Cannula. *Innovations (Phila)*. 2016 Nov/Dec; 11(6):448-450.

Wever-Pinzon OE, Naka Y, Garan AR, Takeda K, **Pan S**, Takayama H, Mancini DM, Colombo PC, Topkara VK. National trends and outcomes in device-related thromboembolic complications and malfunction among heart transplant candidates supported with continuous-flow left ventricular assist devices in the United States. *Journal of Heart and Lung Transplantation*. 2016 Jul; 35(7):884-92.

Perez MV, Pavlovic A, Shang C, Wheeler MT, Miller CL, Liu J, Dewey FE, **Pan S**, Thanaporn PK, Absher D, Brandimarto J, Salisbury H, Chan K, MD, Mukherjee RD, Konadhode RP, Myers RM, Sedehi D, Scammell TE, Quertermous T, Cappola T, Ashley EA. Systems genomics identifies a key role for hypocretin/orexin receptor 2 in human heart failure. *Journal of the American College of Cardiology*. 2015 Dec; 66(22):2522-2533.

**Pan S**, Aksut B, Wever-Pinzon OE, Rao S, Levin AP, Garan AR, Fried JA, Takeda K, Takayama H, Yuzefpolskaya M, Uriel N, Jorde UP, Mancini DM, Naka Y, Colombo PC, Topkara VK. Incidence and Predictors of Myocardial Recovery on Long-Term Left Ventricular Assist Device Support: Results From the United Network Organ Sharing Database. *Journal of Heart and Lung Transplantation*. 2015 Dec; 34(12): 1624-9.

**Pan S**, Sommese RF, Sallam KI, Nag S, Sutton S, Miller SM, Spudich JA, Ruppel KM, Ashley EA. Establishing Disease Causality for a Novel Gene Variant in Familial Dilated Cardiomyopathy Using a Functional In-Vitro Assay of Regulated Thin Filaments and Human Cardiac Myosin. *BMC Medical Genetics*. 2015 Oct 26;16(1):97.

Ali ZA, de Jesus Perez V, Yuan K, Orcholski M, **Pan S**, Qi W, Chopra G, Adams C, Kojima Y, Leeper NJ, Qu X, Zaleta-Rivera K, Kato K, Yamada Y, Oguri M, Kuchinsky A, Hazen SL, Jukema JW, Ganesh SK, Nabel EG, Channon K, Leon MB, Charest A, Quertermous T, Ashley EA. Oxido-reductive regulation of vascular remodeling by receptor tyrosine kinase ROS1. *Journal of Clinical Investigation*. 2014 Dec 1;124(12):5159-5174.

Ali ZA, Roleder T, Narula J, Mohanty BD, Baber U, Kovacic JC, Mintz GS, Otsuka F, **Pan S**, Virmani R, Sharma SK, Moreno P, Kini AS. Increased thin-cap neoatheroma and periprocedural myocardial infarction in drug-eluting stent restenosis: multimodality intravascular imaging of drug-eluting and bare-metal stents. *Circulation: Cardiovascular Interventions*. 2013 Oct 1; 6(5): 507-17.

Huang NF, Lai ES, Ribeiro AJ, **Pan S**, Pruitt BL, Fuller GG, Cooke JP. Spatial patterning of endothelium modulates cell morphology, adhesiveness and transcriptional signature. *Biomaterials*. 2013 April; 34(12): 2928-2937.

**Pan S**, Caleshu CA, Dunn KE, Foti MJ, Moran MK, Soyinka O, Ashley EA. Cardiac Structural and Sarcomere Genes Associated with Cardiomyopathy Exhibit Marked Intolerance of Genetic Variation. *Circulation: Cardiovascular Genetics*. 2012 Dec 1; 5(6):602-10.

Liang Q, Smith AD, **Pan S**, Tyurin VA, Kagan VE, Hastings TG, Schor NF. Neuroprotective Effects Of Tempol In Central And Peripheral Nervous System Models Of Parkinson's Disease. *Biochemical Pharmacology*. 2005 Nov 1; 70(9): 1371-1381.

## Reviews, Books, and Book Chapters

Saith SE and **Pan S**. Epidemiology and the Economic Burden of Heart Failure. In Yehya AA [Ed]. *Heart Failure: What a Non-Heart Failure Specialist Needs to Know*. Nova Biomedical. 2018.

**Pan S**, Cabral CS, Ashley EA, Perez MV. Orexin: A Missing Link Between Sleep Disorders & Heart Failure? *Current Heart Failure Reports*. 2017 Apr; 14(2):100-105.

**Pan S**, Farr MA. Pro: The Obese Heart Failure Patient as a Candidate for Mechanical Circulatory Support: It's Inevitable. <http://www.acc.org>. June 29, 2015. <http://www.acc.org/latest-in-cardiology/articles/2015/06/25/13/36/pro-the-obese-heart-failure-patient-as-candidate-for-mechanical-circulatory-support>.

**Pan S**, Kim JB, Mehta NN, Knowles JW. Genetic Applications in Coronary Artery Disease. In Shah SH and Arnett DK [Ed]. *Cardiovascular Genetics and Genomics in Clinical Practice*. Demos Medical Publishing. 2014. 253-264.

**Pan S**, Knowles JW. Exploring Predisposition and Treatment Response: the Promise of Genomics. *Progress in Cardiovascular Disease*. 2012 July; 55(1):56-63.

Dewey FE, **Pan S**, Wheeler MT, Quake SR, Ashley EA. DNA sequencing: clinical applications of new DNA sequencing technologies. *Circulation*. 2012 Feb 21;125(7):931-44.

**Pan S**, Dewey FE, Perez MV, Knowles JW, Chen R, Butte AJ, Ashley EA. Personalized Medicine and Cardiovascular Disease: From Genome to Bedside. *Current Cardiovascular Risk Reports*. 2011 Dec; 5(6): 542–551.

## Abstracts/Posters

**Pan S**, Chen R, Perez MV, Sallam KI, Pavlovic A, Haddad F, Snyder M, Ashley EA. Exome Sequencing and Linkage Filters Identify Novel Candidate Mutations in a Family with Left-Ventricular Non-Compaction. 12<sup>th</sup> International Congress of Human Genetics / American Society of Human Genetics 61<sup>st</sup> Annual Meeting. October 2011.

**Pan S**, Knowles JW, Ashley EA. From Yellow Toes to Dizziness Woes: a Drug Interaction Causing Increasing Heart Block. American College of Physicians Northern California Chapter Scientific Meeting. November 2009.

**Pan S**, Ganesh SK, Yu A, Zheng G, Joo J, Gellar NL, Skelding KA, Billings EM, Kennedy GC, Nabel EG. "Regulation of Vascular Smooth Muscle Cell Proliferation by RGS3: Implications for Vascular Remodeling." Keystone Symposium on the Molecular Biology of the Vasculature. April 2006.